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METHOD OF SILK SCREEN PRINTING

TECHNICAL FIELD

The present invention pertains, in general, to methods of silk screen printing. More specifically, the present invention discloses a method of preparing a printed object with a surface which is uneven and has excellent tactile properties without gathering hand prints.

PRIOR ART

Typically, a printing process has been mainly used for preparation of calendars having photographs. However, photographs printed through such a printing process suffer from smooth surface, unpleasant tactile sensation and gathering of fingerprints or hand prints.

Therefore, there is required for a method for producing printed objects making a favorable impression on a viewer, and having good tactile properties.

DISCLOSURE OF THE INVENTION

Accordingly, it is an object of the present invention to solve the problems encountered in the prior art and to provide a method of preparing a printed object having an uneven surface and excellent tactile properties without gathering hand prints.

It is another object of the present invention to provide a method of preparing a printed object of high quality.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a photograph printed by conventional techniques; and

Fig. 2 is a photograph printed by the method of the present invention.

BEST MODES FOR CARRYING OUT THE INVENTION

Leading to the present invention, the intensive and thorough research on printing methods carried out by the present inventors aiming to achieve the above objects, led to the development of a method of preparing printed objects which are natural and of high quality by changing the number of lines and dot percentage of a film placed on a screen and mesh counts of the screen. Such a method is called 'photo technique'.

In the silk screen printing method of the present invention, a diagonal screen made of a screen fabric having a mesh count of 200-300 is coated with a light sensitive emulsion and dried, and a film of 40-60 lines and 60-70 dot percentage is placed thereon. Then, such a diagonal screen is exposed to ultra-violet light for 1-2 min, and the screen areas which have not been exposed to the light are washed out, followed by conducting a screen printing process and an ink curing process.

Generally, film lines range from 40 to 175. As for the film useful in the photo technique of the present invention, a film of 40-60 lines is used. The lower the number of lines, the rougher the surface. Meanwhile, the higher the number of lines, the softer the surface. In order to form an uneven surface, a film of 60 lines or lower is preferably used. Of films of 175 lines and 10-100 dot percentage or 40 lines and 10-100 dot percentage, it is preferred that a film of 40-60 lines and 60-70 dot percentage is used.

As for the screen, a screen fabric having a mesh count of 60-420 is generally used, but in the present invention, a screen having a mesh count of 200-300 is used. Particularly, a diagonal screen is used for detailed line work in the photo technique.

Most preferably, when printing for providing soft feeling is performed, a film of 60 lines and 60 dot percentage is selected and a diagonal screen having a mesh count of 250 is used. On the other hand, a printing process for providing rough feeling requires a film of 40 lines and 60 dot percentage and a diagonal screen having 250 mesh count.

Upon printing, a scale of a coater is kept constant and a scale of a squeegee is set to 0 (zero). A distance between the coater and the squeegee is regulated in the range of 5.0-5.4cm. A squeegee angle may be adjusted in the range of 15 to 45° depending on the scale of the squeegee. When the scale of the squeegee is set to 15mm, a printing process is carried out at a squeegee angle of 45°.

An ink curing process is carried out by use of a UV lamp, in which the lamp is exemplified by a mercury lamp or a metal lamp having intensity of illumination of 1500-1800 lux.

A better understanding of the present invention may be obtained in light of the following examples which are set forth to illustrate, but are not to be construed to limit the present invention.

EXAMPLE

100 x 110cm of a diagonal screen having a mesh count of 250-300 was coated once at front and back faces thereof with a light sensitive emulsion having the trade name ULANO 569, and dried for 5 min using a heat dryer. The dried back face of the screen was further coated three times with the emulsion, and the front face of the screen was further coated twice, after which the coated faces were dried for 5 min by use of a heat dryer. The screen was placed onto a process camera, on which a film (40 lines, 60 dot percentage) was superimposed. Thereafter, the screen having the film placed thereon was exposed to ultra-violet light for 90 sec, and the screen areas which had not been exposed to the light were washed out with water.

Then, a printing process was performed using etching S ink available from Burim Chemical Co. Ltd. (Korea) and a Sakurai automatic printing machine. The distance between the coater and the squeegee was 5.2cm, and the squeegee angle was controlled to 45°. The printed object is shown in Fig. 2.

INDUSTRIAL APPLICABILITY

As described above, objects printed by the printing method of the present invention make a favorable impression on a viewer due to formation of a surface which is uneven and is not smooth while not gathering hand prints.

The printing method of the present invention is preferably applied for preparation of printed objects, such as calendars with photographs, as well as all other printed objects and other photographs.

The present invention has been described in an illustrative manner, and it is to be understood that the terminology used is intended to be in the nature of description rather than of limitation. Many modifications and variations of the present invention are possible in light of the above teachings. Therefore, it is to be understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described.